CENWP-OD 08 May 2008

MEMORANDUM FOR THE RECORD

Subject: FINAL Minutes for the 8 May 2008 FPOM meeting.

The meeting was held in the RDP Summit Room, NWP. In attendance:

Last	First	Agency	Office	Email
Bailey	John	USACE	509-527-7123	John.c.bailey@usace.army.mil
Benner	David	FPC	503-230-7564	dbenner@fpc.org
Bettin	Scott	BPA	503-230-4573	swbettin@bpa.gov
Cordie	Bob	USACE	541-298-7406	Robert.p.cordie@usace.army.mil
Dykstra	Tim	USACE	509-527-7125	Timothy.A.Dykstra@usace.army.mil
Feil	Dan	RCC	503-808-3943	Dan.h.feil@usace.army.mil
Fredricks	Gary	NOAA	503-231-6855	Gary.fredricks@noaa.gov
Hausmann	Ben	USACE	541-374-4598	Ben.j.hausmann@usace.army.mil
Hevlin	Bill	NOAA	503-230-5415	Bill.hevlin@noaa.gov
Klatte	Bern	USACE	503-808-4318	Bernard.a.klatte@usace.army.mil
Lorz	Tom	CRITFC	503-238-3574	lort@critfc.org
Mackey	Tammy	USACE	503-808-4305	Tammy.m.mackey@usace.army.mil
Martinson	Rick	PSMFC	541-296-8989	rickdm@gorge.net
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Moody	Greg	USACE	509-527-7124	Gregory.p.moody@usace.army.mil
Schlenker	Steve	USACE	503-808-4881	Stephen.j.schlenker@usace.army.mil
Schwartz	Dennis	USACE	503-808-4779	Dennis.e.schwartz@usace.army.mil
Stansell	Robert	FFU	541-374-8801	Robert.j.stansell@usace.army.mil
Stephenson	Ann	WDFW	360-906-6769	stephaes@dfw.wa.gov
Swenson	Larry	NOAA	503-230-5448	Larry.swenson@noaa.gov
Tackley	Sean	FFU	541-374-8801	Sean.c.tackley@usace.army.mil
Wills	Dave	USFWS	360-604-2500	David_wills@fws.gov
Wridge	Ron	USACE	503-808-4927	Ronald.S.Wridge@usace.army.mil

Ben Hausmann and Tom Lorz called in.

1. April minutes were approved and the May agenda was reviewed.

2. Action Items.

2.1.[long time ago] Switchgate seals at BON and JDA. **ACTION:** JDA will move forward with the airbladder seals. NOAA worries about fish being able to access areas under the gate. BON will continue moving forward with reducing leakage around and under the gate. ***STATUS:*** *JDA has turned the task over to the small projects team at RDP.*

2.2.[Feb 08] BON B2CC closure. **ACTION:** Ops will put together a fact sheet for the April FPOM detailing the issues associated with closing the B2CC on 31 August as opposed to either 29 August or 2 September. ***STATUS:*** *To be discussed under item #**3.2**.*

2.3.[Apr 08] BON sturgeon protocols. **ACTION:** Mackey and Hausmann will work with the Project to get unit start-up/dewatering protocols in writing and to FPOM for review. ***STATUS:*** *to be discussed under item 13.1.*

2.4.[Apr 08] LGO fish jumping. **ACTION:** Cordie will send photos of their netting to Bailey. The NWW net installer will contact Cordie to discuss methods used at JDA. ***STATUS:*** *completed. Bailey brought in photos of the completed work.*

2.5.[Apr 08] TDA grating replacement. **ACTION:** Klatte will contact N. Richards and Cordie to discuss options and what can be done within the next three years. ***STATUS:*** *Klatte talked with N. Richards. He received a letter report from the engineers. Fredricks would like to see the TDA galvanized grates epoxied or painted prior to*

installation. This would be a short-term fix while funding for stainless steel could be found. Cordie said that the grating below the tailwater elevation would cause different concentration levels than the grates above tailwater, due to AWS flushing flow. Can the water chemistry be tested between TDA-N and TDA-E? Getting a baseline might be a worthwhile cost and first step.

2.6.[May 08] TDA grating replacement. **ACTION:** Cordie will look at the cost of water chemistry testing.

2.7.[May 08] TDA grating replacement. **ACTION:** N. Richards will look into the possibility of painting galvanized grates.

2.8.[Apr 08] B2CC end of season closure date. **ACTION:** Benner agreed to provide historical fish numbers passing Bonneville on 29 August and 2 September. ***STATUS:*** *FPAC discussed on 7 May. FPAC prefers 31 August, but made no decision. Mackey clarified that the 31st is no longer an option due to the inability to get personnel to work that day. Bettin suggested closing it 29 August. This led to more discussion about what fish passage might be during that time of the year. There were questions about the effects of the BGS.*

2.9.[May 08] B2CC end of season closure date. **ACTION:** Fredricks will do a SIMPAS analysis for 29 August and 2 September. That will be presented at the June FPOM.

2.10. [Apr 08] McNary dewatering screens write-up. **ACTION:** B. Eby and NWW bios will draft a letter to FPOM detailing the water elevation/dewatering screen monitoring system at McNary. They will provide a level of confidence in the existing system so FPOM will be assured there will not be another fish kill. ***STATUS:*** *Swenson talked with B. Eby. He determined the situation was worse than expected. Head loss is not measured; water elevation on the upstream side of the screen is measured. If elevations get too high, then gates on the backside are open. This is fine if there is no debris, but if there is debris then head and hotspots get worse. This needs to move to FFDRWG and have engineers really look at designing a good system. A group of engineers and Project personnel will need to get together at McNary to look at the system and discuss options.*

2.11. [May 08] McNary dewatering screen monitoring. **ACTION:** Swenson will provide some ideas about potential solutions to NWW bios.

2.12. [May 08] McNary dewatering screens monitoring. **ACTION:** Dykstra will set up a meeting for an ad-hoc discussion with engineers and the Project. Dykstra will also make sure Swenson gets electronic copies of the channel and screen drawings.

2.13. [May 08] PIT tag detection needs at JDA. **ACTION:** D. Benner will take get the query information into a memo and send it to FPOM.

2.14. [May 08] PIT tag detection needs at JDA. **ACTION:** D. Benner (FPC) will explore the significance of the detected fish. If they run into any roadblocks, FPOM will provide assistance as necessary.

2.15. [May 08] PIT tag detection needs at JDA. **ACTION:** D. Wills will inquire about the Entiat releases in September 2006.

2.16. [May 08] ICH U1-6 1% tables. **ACTION:** Moody to send clean tables to FPOM. ***STATUS:*** *Sent on 12 May to Mackey and included in these minutes.*

2.17. [May 08] ICH U1-6 1% tables. **ACTION:** BPA to get the tables updated in their system. ***STATUS:*** *Bettin reported the BPA system was updated with the new tables on 8 May, following FPOM. He also sent the new tables to ICH.*

2.18. [May 08] NWW fish release site at BON. **ACTION:** Dykstra will draft up the SOP for draining the flushing water line after each fish release. The flushing will be done by the truck drivers.

2.19. [May 08] BON spillbay closure. **ACTION:** Schwartz will get the new patterns to RCC and RCC will issue the teletype to allow BON to close bays 9, 12, and 14 so maintenance crews may access the main dam gallery to replace a worn out dewatering pump. ***STATUS:*** *This was completed.*

2.20. [May 08] BON B2CC closure for PNNL work. **ACTION:** Schwartz will coordinate a closure with ODFW. He will attempt to get a closure prior to 14 May. ***STATUS:*** *Schwartz got the approval for the operation to occur on 12 May.*

2.21. [May 08] BON B2CC closure for PNNL work. **ACTION:** Schwartz will inform Lorz once he figures out what the forebay will look like.

2.22. [May 08] Shad Fishery Task Group. **ACTION:** Cordie will contact Roger and inform him we need the guidelines by 12 May. Cordie will send the draft to Klatte or Mackey.

3. Updates.

3.1. Pinnipeds at Bonneville. Reports are available at:
www.nwd-wc.usace.army.mil/tmt/documents/fish/2008/sea_lion_hazing2008.html

3.1.1. Fredricks wanted to know the percentage of the run taken by sea lions to date. Stansell said he does not calculate the percentage of the run taken until the end of the May since the run and the numbers of sea lions are fluctuating. Klatte asked if there were any behavioral changes. Stansell reported that the relocation program was successful and a few of the big ones were taken.

3.1.2. The deaths over the weekend are still under federal investigation. Stansell reported what he knew. An observer reported the gates on the traps closed around 1100-1130 on 4 May. Robin Brown arrived and found all six dead. The observer had taken photos and five of six were still alive. Heads were removed from all six. Metal was detected in all six heads. One bullet was found in what was considered an old wound. As far as the gates being closed, it has been suggested that the ropes were just held under a rock and TW went up so the rope may have come loose and the gate tripped that way. The sea lions may have died from heat and stress. BPA is buying remote gate closures for the traps. All trapping has stopped until Spring 2009. Boat hazing has ceased. Dam hazing continues. No word on the sea lion body found floating near the I-5 bridge.

3.2. B2CC closing date. A decision won't be made until June.

3.3. Ice Harbor, Units 1-6, 1% Tables updated. **FPOM approves the tables**. BPA will get the new tables into their system for implementation ASAP. Moody will send clean tables to FPOM and include when the tables were updated.

4. BON/NWW fish truck release site.

4.1. The Project reported on 5/6 Saybr flushed the piping for the SMF Truck Release site. After the test, Construction said SOP will be to close the isolation valve and drain the system between releases. Allowing the use of galvanized pipe in this fish release system creates many potential problems. The isolation valve is hard to access. The drain valve water could undermine the pump footing. If the isolation valve is closed when the pump is turned on the seal will be destroyed.

4.2. FPOM has concerns about water sitting in the line, especially since the site will be used intermittently. The solution was to attach a hose to the pipe and drain the water away from the pump footing. Dykstra will develop an SOP.

4.3. Ron Wridge, the mechanical engineer for this project, popped in at the very end of the meeting to discuss the current isolation valve. He suggested installing another isolation/drain valve downstream of the pump. This will allow the pipe to be easily drained after each use. **FPOM agreed to this.**

5. **BON spillway closures.**
   - **5.1.** Open bays 1, 2, 17 and 18 to flush debris. Couldn't do this action on 7 May due to potentially exceeding the gas cap. **FPOM says this is covered in the 2008 FPP Appendix A.**
   - **5.2.** Close bays 9, 12, 14 and throttle back on adjacent spillbays to allow BON maintenance access to the main dam gallery. One of the dewatering pumps is OOS. Personnel are ready to swap out the old pump and install a replacement pump, all in one day. They would like to do this work as soon as possible and have people ready to work on 9 May if approved. **FPOM concurs with the urgency of the need to do the work. FPOM approved a 0600-1800 work window on 9 May.** Schwartz will get the new patterns to RCC and RCC will issue the teletype.
   - **5.3.** B2CC closure for PNNL. PNNL needs to repair a broken cable and right a flipped barge.
     - **5.3.1.** Currently BON has issued a moratorium on all BRZ permits for the PH2 forebay due to the capsized boat incident that occurred on 28 April. Schwartz reported there is a safety meeting scheduled for 14 May with the Project and PNNL to discuss how to safely enter the PH2 forebay BRZ with the BGS installed and the flows anticipated. It is presumed the Project will not allow any work in the PH2 forebay BRZ without first closing the B2CC and throttling back on PH loading. Schwartz wanted to get FPOM approval for a closure of the B2CC so PNNL can get in the PH2 forebay BRZ to finish equipment installation on 15 or 16 May. BPA suggested an earlier date would be more feasible since the weather is expected to warm and flows are expected to rise.
     - **5.3.2.** By not righting the barge and losing those GPS units, we will lose the accuracy on the hydrophones. Right now the accuracy is about 3-5 meters, with the additional GPS units it will be about 1 meter. Fredricks said it won't compromise efficiency data; it won't impact a decision regarding the TIES; it will have an impact on how the region can apply using a BGS system at other Projects. **FPOM said ok to closing the B2CC from 1000-1600 sometime the week of 11 May, the sooner the better.** Schwartz will coordinate with ODFW and try to arrange for a closure prior to 14 May.
     - **5.3.3.** Schwartz returned later to report he had spoken with Jim Mahar and received preliminary approval to conducted work in the B2 BRZ on Monday 12 May. Before this BRZ permit will be issued the B2CC will be closed and flows will be shifted from PH2 over to PH1 as much as possible. The work window is from 1000-1600 on Monday the 12th. At 0900 on Monday PNNL researchers and all boat operators and riders will meet with Schwartz and the Project staff at the south end of the +90 deck at PH2 prior to the start of work. The meeting will be focused on details relating to the work that needs to be accomplished at or around the BGS structure. The project will only issue the BRZ permit if they feel that an adequate safety plan has been discussed and that all parties are in agreement as to the unwavering safety requirements to complete work in the this area. PNNL staff will need to present a detailed plan for the work that needs to be accomplished that day.
     - **5.3.4.** Schwartz was informed the forebay restriction may bump up against the tribal fishing. Lorz requested Schwartz inform him when he figures out what the forebay will look like.
     - **5.3.5.** Bettin asked what the protocols might be for body recovery if they wash up to the BGS. Currently no protocols in place but if the recovery team would like to look along the BGS, they may be able to do so during this outage.

6. **TDA grating decision.** Discussed under item 2.5. Water chemistry testing and possibility of painting galvanized steel are the next steps.

7. **JDA fish turbine intake depth.** Schlenker asked if there were any depth at which intakes might be placed that would not require fish screens. He said this would be brought up again at FFDRWG but wanted FPOM to start thinking about it since the engineers are working on an alternatives study for JDA-N now. BPA asked what the anticipated survival would be if juveniles got into the system. After some discussion, it was determined that any juveniles that got into the system would have about 0% survival. Swenson mentioned a similar issue has come up with the ICH COP. Fredricks explained that the current screen criteria are fry criteria; older infrastructure is usually grandfathered; all new construction is required to be screened and; anything taking water from the forebay should be screened.

   Fredricks did add that he would entertain alternative screening ideas such as eicher screens (screens within the pipeline) and Swenson said there should be some reasonable policy established where there is some minimum depth (such as 100 or 150') for non-screened intakes. This would a basin-wide policy. It was also suggested that the alternatives study team look at the old TDA PIES reports to see what was discussed as far as deep intakes and the conclusions from those discussions.

8. **Closing FOGs at ICH.** Through discussions with the Project, Dykstra discovered that seven instead of four FOGs were open. Seven were required in the 2007 FPP; four are required in the 2008 FPP. The FOGs are now in 2008 FPP criteria.

9. **LMN mortality incident on 18 April.** (NWW e-mailed a MFR to FPOM on 22 April). Dykstra explained that 463 juvenile fish were being held overnight for an avian predation study. Water to the tank was shut off and the fish were discovered dead the next morning. Remediation plan include hanging tags stating FISH WATER DO NOT CLOSE, also include hourly logs indicating checks have been completed. NWW is very concerned about the loss and are working diligently to make sure this doesn't happen again. Fredricks asked about the determination of the kokanee. It was explained that 220mm and greater is considered a kokanee.

10. **Brief on reported high injury rates of juveniles at LGS.** Dykstra explained that a high injury rate was being reported at LGS. NWW talked with SMP staff and they didn't indicate there was a problem. What appears to have happened is somewhere between SMP and FPC, the partial descaling column was being categorized as injuries instead of partial descaling. Fredricks was concerned there may be a lack of training that needs to be dealt with. Dykstra clarified that it is believed the SMP was doing their job correctly, and it was in the translation of that data to FPC where the errors occurred.

11. **Task Group updates**
    - **11.1.** Fishway velocity (***Chair-Cordie****, Fredricks, Lorz, Meyer, Mackey*).
    - **11.2.** Lamprey (***Chair-Cordie****, Clugston, Dykstra, Lorz, Mackey, Meyer, Moody, Moser, Peery, Rerecich, Zyndol*). Kick-off meeting for the 10-yr strategic plan at TDA.
    - **11.3.** Pinnipeds (***Chair-Stansell****, Bettin, Benner, Brown, Fredricks, Hausmann, Kruger, Stephenson, Richards, Wills*). Will meet after the June FPOM. Clugston will need to be invited as well.

11.4. Shad fishery (***Chair-Cordie****, Benner, Fredricks, Lorz, Mackey, R. Dick Jr., Welch, Wills*). Had a conference call on 14 April. Changes were agreed to, Roger agreed to write up the draft guidelines and submit to the group. Waiting for Roger to send in revised draft of the shad fishery guidelines. Cordie will contact Roger and inform him we need the guidelines by 12 May. Cordie will send the draft to Klatte or Mackey. The fishery is expected to start by the end of May and FPOM needs time to review the guidelines and approve them.

11.5. TIES (***Chair-Klatte****, Bettin, Benner, Fredricks, Kruger, Mackey, Schwartz, Wills*).

12. Water forecast. (RCC). http://137.161.65.209/water_supply/ws_fcst.cgi Forecast has gone down everywhere except for the Willamette River.

12.1. **http://www.nwd-wc.usace.army.mil/tmt/** What is the status of the FPOM documents link? Will be completed sometime this summer.

13. FPP proposed changes.

13.1. BON sturgeon language. Changes suggested.

13.2. JDA turbine unit 5. OK'd with changes.

13.3. JDA SMF PIT tag shutdown date. OK.

13.4. Voluntary v involuntary spill definitions.

13.5. ICH 1% tables. OK.

14. Other. No additions to this agenda.

15. Next meeting. 12 June from 0900-1200 at John Day Dam. There will be a visit to the TSWs following the meeting. The Pinniped Task Group will meet a day before or after FPOM.

16. Finalized results from this meeting.

16.1. FPOM approved of the updated ICH 1% tables.

16.2. FPOM says BON spillway debris flushing is covered in the 2008 FPP Appendix A.

16.3. FPOM concurs with the urgency of the need for BON to switch out dewatering pumps in the main dam gallery. FPOM approved a 0600-1800 outage on 9 May.

16.4. FPOM agreed to the installation of an isolation/drain valve in the NWW fish truck release site at BON. The location will be easier to access than the current valve.

16.5. FPOM agreed to closing the B2CC from 1000-1600 sometime the week of 11 May and suggested the sooner the better.

17. The following information was distributed at, or emailed prior to, the FPOM meeting:

17.1. Agenda, Fish Passage O&M Coordination Team. Provided by B. Klatte.

17.2. ICH 1% tables. Provided by G. Moody

17.3. LMN fish kill MFR. Emailed on 22 April and attached to the agenda.

17.4. RCC forecast. Provided by D. Feil.

17.5. FPP change forms. Attached to the agenda.

17.6. FPOM Calendar. Attached to the agenda.

17.7. NWW handout. Provided by J. Bailey

Table IHR-5. The 1% best efficiency ranges for turbine units 1-3 with STSs.

Head (Ft)	Lower Generator Limits		Upper Generator Limits	
	(MW)	(CFS)	(MW)	(CFS)
85	**51.7**	**8,417**	**83.6**	**13,590**
86	52.6	8,443	84.6	13,585
87	53.4	8,469	85.6	13,580
88	54.2	8,494	86.6	13,574
89	55.0	8,518	87.6	13,569
90	**55.8**	**8,542**	**88.6**	**13,563**
91	56.5	8,548	89.8	13,585
92	57.1	8,554	90.9	13,607
93	57.8	8,559	92.1	13,628
94	58.5	8,565	93.2	13,649
95	**59.2**	**8,570**	**94.4**	**13,669**
96	59.9	8,589	95.3	13,662
97	60.7	8,607	96.3	13,655
98	61.5	8,624	97.3	13,648
99	62.2	8,641	98.2	13,641
100	**63.0**	**8,658**	**99.2**	**13,634**
101	64.0	8,707	99.9	13,590
102	65.0	8,354	100.6	13,547
103	66.0	8,804	101.3	13,505
104	67.0	8,850	102.0	13,463
105	**68.0**	**8,896**	**102.6**	**13,422**

Table IHR-6. The 1% best efficiency ranges for turbine units 1-3 without STSs.

Head (FT)	Lower Generator Limits		Upper Generator limits	
	(MW)	(CFS)	(MW)	(CFS)
85	**51.9**	**8340**	**89.9**	**14,452**
86	52.7	8367	91.0	14,447
87	53.5	8392	92.0	14,441
88	54.3	8417	93.1	14,436
89	55.1	8441	94.2	14,430
90	**55.9**	**8465**	**95.3**	**14,424**
91	56.6	8471	96.5	14,448
92	57.3	8477	97.8	14,471
93	58.0	8482	99.0	14,494
94	58.6	8,047	100.3	14,516
95	**59.3**	**8,052**	**101.5**	**14,537**
96	59	8,070	102.5	14,530
97	59	8,087	103.5	14,522
98	60	8,103	104.6	14,515
99	61	8,119	105.7	14,508
100	**62**	**8,135**	**106.7**	**14,500**
101	62	8,182	107.4	14,454
102	63	8,227	108.2	14,408
103	64	8,272	108.9	14,363
104	65	8,316	109.7	14,319
105	**66**	**8,359**	**110.4**	**14,275**

NOTE: Table based on the 1978 model test and 2006 Unit 3 index test (IHR -5&6 revised 2008)

Table IHR-5a. The 1% best efficiency ranges for turbine unit 2 with STSs. (IHR new 2008)

Head (Ft)	Lower Generator Limits		Upper Generator Limits	
	(MW)	(CFS)	(MW)	(CFS)
85	**67.6**	**10,986**	**72.9**	**11,854**
86	68.6	11,017	73.9	11,864
87	69.6	11,047	74.8	11,873
88	70.6	11,077	75.8	11,882
89	71.7	11,105	76.7	11,890
90	**72.7**	**11,133**	**77.7**	**11,899**
91	73.4	11,120	78.7	11,917
92	74.2	11,107	79.8	11,936
93	75.0	11,093	80.8	11,953
94	75.8	11,080	81.8	11,970
95	**76.5**	**11,068**	**82.9**	**11,987**
96	77.3	11,071	83.5	11,955
97	78.2	11,073	84.2	11,924
98	79.0	11,076	84.8	11,894
99	79.8	11,079	85.5	11,864
100	**80.6**	**11,082**	**86.1**	**11,835**
101	81.5	11,096	87.1	11,852
102	82.5	11,110	88.1	11,869
103	83.4	11,124	89.1	11,886
104	84.3	11,138	90.1	11,902
105	**85.2**	**11,151**	**91.1**	**11,918**

Table IHR-6a. The 1% best efficiency ranges for turbine unit 2 without STSs.

Head (FT)	Lower Generator Limits		Upper Generator limits	
	(MW)	(CFS)	(MW)	(CFS)
85	**68.7**	**11,032**	**74.0**	**11,896**
86	69.7	11,064	75.0	11,905
87	70.7	11,094	76.0	11,914
88	71.8	11,124	76.9	11,923
89	72.8	11,153	77.9	11,932
90	**73.8**	**11,181**	**78.8**	**11,940**
91	74.6	11,167	79.9	11,959
92	75.4	11,154	80.9	11,978
93	76.2	11,141	82.0	11,995
94	76.9	11,128	83.1	12,013
95	**77.7**	**11,115**	**84.1**	**12,029**
96	78.6	11,118	84.8	11,998
97	79.4	11,121	85.4	11,966
98	80.2	11,124	86.1	11,936
99	81.1	11,127	86.7	11,906
100	**81.9**	**11,130**	**87.4**	**11,877**
101	82.8	11,144	88.4	11,894
102	83.8	11,158	89.4	11,911
103	84.7	11,172	90.4	11,928
104	85.6	11,186	91.4	11,944
105	**86.5**	**11,199**	**92.4**	**11,960**

NOTE: Table based on the 1956 model test and 2008 Unit 2 Abbrev. index test (IHR new 2008)

Table IHR-7. The 1% best efficiency ranges for turbine units 4-6 with STSs.

Head (FT)	Lower Generator Limits		Upper Generator limits	
	(MW)	(CFS)	(MW)	(CFS)
85	**58.9**	**9,369**	**93.1**	**14,810**
86	59.7	9,380	94.4	14,824
87	60.6	9,390	95.7	14,838
88	61.4	9,400	97.0	14,851
89	62.2	9,410	98.2	14,864
90	**63.0**	**9,419**	**99.5**	**14,876**
91	63.7	9,416	100.7	14,885
92	64.5	9,414	102.0	14,895
93	65.2	9,411	103.2	14,904
94	65.9	9,409	104.5	14,912
95	**66.6**	**9,406**	**105.7**	**14,921**
96	67.5	9,416	106.7	14,892
97	68.3	9,425	107.7	14,864
98	69.1	9,434	108.6	14,836
99	69.9	9,442	109.6	14,809
100	**70.7**	**9,451**	**110.6**	**14,782**
101	71.4	9,446	112.9	14,939
102	72.0	9,441	115.1	15,093
103	72.7	9,436	117.4	15,224
104	73.3	9,431	119.7	15,392
105	**74.0**	**9,426**	**121.9**	**15,538**

Table IHR-8. The 1% best efficiency ranges for turbine units 4-6 without STSs.

Head (FT)	Lower Generator Limits		Upper Generator limits	
	(MW)	(CFS)	(MW)	(CFS)
85	**62.0**	**9,745**	**110.7**	**17,413**
86	62.8	9,756	112.3	17,430
87	63.7	9,767	113.8	17,447
88	64.5	9,777	115.3	17,462
89	65.4	9,787	116.8	17,477
90	**66.3**	**9,797**	**118.3**	**17,492**
91	67.0	9,794	119.8	17,503
92	67.8	9,792	121.3	17,515
93	68.6	9,789	122.7	17,525
94	69.3	9,787	124.2	17,535
95	**70.1**	**9,784**	**125.7**	**17,545**
96	70.9	9,794	126.8	17,512
97	71.8	9,804	128.0	17,479
98	72.7	9,813	129.2	17,446
99	73.5	9,822	130.3	17,414
100	**74.4**	**9,831**	**131.5**	**17,382**
101	75.1	9,825	134.2	17,567
102	75.7	9,820	136.9	17,748
103	76.4	9,815	139.6	17,926
104	77.1	9,810	142.3	18,100
105	**77.8**	**9,805**	**145.0**	**18,271**

NOTE: Table based on the 1978 model test and 2006 Unit 6 index test (IHR -7&8 revised 2008)

Fish Mortality at Lower Monumental Fish Facility

1. Description of the Incident

At 0745 hours on April 18, 2008, the day-shift corps biological science technician ("facility operator") on duty reported that the juvenile fish in the tank (referred to as "midi-tanker holding tank") outside the wet lab were dead. Upon investigation, biologists noticed that the supply water to the tank was turned off, resulting in stagnant water. The technician reported that this condition was as she found it. Dead fish were removed and recorded. These fish presumably died from lack of oxygen, as they did not have any external evidence of injuries or diseases that could explain their demise. Seven or 8 fish were still alive and swimming, were subsequently released to the river. A total of 463 fish mortalities were incurred. Fish mortalities by species groups are as follows:

9 unclipped steelhead
16 clipped steelhead
49 unclipped yearling chinook
182 unclipped yearling chinook with red left elastomere tag
20 clipped yearling chinook
186 clipped yearling chinook with red left elastomere tag
1 unclipped kokanee

The "midi-tanker" holding tank was engineered to hold fish during late season trucking operations. The fish held in this tank are offloaded to the truck for transport. The holding tank holds 318 gallons of water and has a water supply capability of 90 gallons per minute. Additional outlet piping from the holding tank to the river was added in early 2007 to accommodate the release of smolts by Oregon State University (OSU) and Real Time Research for the study of avian predation. For this study, steelhead are PIT-tagged, then held in the tank until evening or next-morning release to the river. The researchers have been requesting that we sample daily up to 500 fish of all species combined, as steelhead were making up less than 10% of the sample.

The fish in question were sampled for the OSU study and not for monitoring the condition of fish passing through the bypass facilities. Affected fish were collected from April 16 at 1500 hours to 0400 hours on April 17, and were examined from mid to late afternoon on April 17. All of the fish, including steelhead, chinook and kokanee, were held overnight in the holding tank until they were to be released at 0800 on April 18. Approximately 50 pounds of fish were in the tank.

The assistant fisheries biologist for the Corps (Ken Fone) gave verbal instructions to the facility operators during the preseason facility operator training period to check the tank every hour and ensure that water is flowing through it when fish are being held. He reiterated this point with written instructions in the facility operator log on April 6. OSU researcher employee Bradley Cramer reported that he checked both the supply valve and the release valve positions and that these valves were respectively opened at the proper setting, and closed in the proper position. The Washington Department of Fish and Wildlife (WDFW) technician who fills up the tank with water prior to sampling operations says that she made sure that the water was on before she went home following the completion of sampling activities on April 17. The night-shift facility operator, who worked from 1800 to 0600 hours, checked the tank before nightfall and observed that the water was flowing at that time. The night shift operator checked it again at

0250 hours and did not note any change in the condition. There is no documentation that the tank was checked again until 0745 hours on 18 April.

There was no logical reason to turn the valve off and the valve handle cannot be turned by accidentally bumping it. Most people require 2 hands to turn the valve and it is located behind handrails giving it a high level of physical protection. At this time, it is suspected that the water was shut off sometime between 0250 hours and 0745 hours on 18 April. Currently, it is unknown how or why the water supply valve was closed.

2. Remediation Plan

To ensure that this incident does not occur in the future:

1. Researchers will inform the project biologist or his designee whenever fish are in holding tanks that need to be monitored overnight.
2. Project biologist or his designee will ensure that all facility personnel are aware that fish are being held in holding tanks.
3. A tagging system for important fish water supply valves will be established and implemented. The tagging process will be carried out by the project biologist or his designee and the tag will state “Do not close – Fish water supply”.
4. Additional training to facility personnel will be provided to describe that, while holding fish, the water flow in and out of the tank must be monitored hourly and recorded in the logbook.
5. Fish condition will be noted hourly and recorded in the logbook.
6. If a problem is encountered, immediate action will be taken to fix the problem. The project biologist or his designee will be notified immediately.
7. A record will be made in the logbook to confirm that hourly checks have been completed (described in 4 and 5 above).
8. A label indicating the correct operating setting for the valve will be made on the tank as an additional visual reference for checking the water flow.
9. Raceway 1 will be used when possible to hold non-target fish so as to increase the time before oxygen depletion would become an issue.

2008 Water Supply Forecast Summary* - 5/8/2008

Basin	Station	Period	Jan. Final		Feb. Final		Mar. Final		Apr. Final		May Final	
			Probable	%	Probable	%	Probable	%	Probable	%	Probable	%
Columbia River	*Grand Coulee, WA*	Jan-Jul	61900	98	61100	97	62300	99	61200	97	59800	95
		Apr-Sep	63000	98	62700	98	65000	102	65200	102	63500	99
	The Dalles, OR	Jan-Jul	102000	95	103000	96	103000	96	101000	94	97300	91
		Apr-Aug	88200	95	91800	99	94300	101	94700	102	90900	98
		Apr-Sep	93500	95	97300	99	99900	101	100000	101	96300	98
Kootenai River	*Libby Inflow, MT*	Jan-Jul	5960	95	5960	95	6190	98	6080	96	5820	92
		Apr-Aug	5900	94	5960	95	6240	100	6210	99	5920	95
		Apr-Sep	6270	94	6330	95	6620	100	6590	99	6280	95
SF Flathead River	*Hungry Horse Inflow, MT*	Jan-Jul	1960	88	2050	92	2100	94	2140	96	2030	91
		Apr-Sep	1870	88	1970	93	2040	96	2120	100	2010	95
Snake River	*Lower Granite Inflow, WA*	Jan-Jul	27200	91	29500	98	29200	97	28000	93	26500	88
		Feb-Sep	27500	91	30800	101	30500	100	29200	96	27600	91
		Apr-Jul	19500	90	22200	103	23000	107	23300	108	21800	101
		Apr-Sep	21800	90	24700	102	25600	106	25700	106	24100	100
NF Clearwater River	*Dworshak Inflow, ID*	Jan-Jul	3500	99	3600	101	3580	101	3550	100	3320	94
		Apr-Jul	2610	99	2780	105	2920	110	3160	120	2930	111
		Apr-Sep	2770	99	2970	106	34140	112	3350	120	3110	111
Willamette River	*Salem, OR*	Apr-Sep	4720	98	5450	113	5440	113	5650	118	5720	119

*Data courtesy of Northwest River Forecast Center available at: http://137.161.65.209/water_supply/ws_fcst.cgi

FPP Change Forms
****

Change Request Number:
Date: April 16, 2008
Proposed by: Bonneville Project

Location of Change- BON 5.4.6-5.4.7 and BON 6.5.1-6.5.2 (sections re-numbered as required)
Proposed Change:

5.4.6. *From 1 December through 30 April, non-priority turbine units will not be voluntarily scheduled for extended outages. Priority units are 1, 10, 11, and 18.*

5.4.7. *From 1 December through 30 April, turbines which have been idle/out of service for more than 12 hours will be started by slow rolling the unit after manually tipping turbine blades from flat to steep back to flat.*

After including the two sections above as 6.5.1 and 6.5.2-
The current 6.5.2 will be re-numbered to 6.5.4. Add "*bottom tail logs should be placed first."*
The current 6.5.3 will be re-numbered to 6.5.5. Add "*It is recommended adjacent units be operated to flush fish prior to placing tail logs in the unit to be OOS. It is also recommended that units located adjacent to OOS units not be voluntarily taken out of service until the adjacent units return to service."*

Reason for Change: To better protect sturgeon in the draft tube and turbine environment.

Comments from others: FPOM doesn't want priority units OOS during fish passage season.
****

Change Request Number:
Date: 4/24/08
Proposed by: John Day Project

Location of Change- JDA 5
Proposed Change: Remove the requirement to run U5 as the first priority unit.
Table JDA-5. Turbine unit operating priority for John Day Dam.

Season	Time of Day	Unit Operating Priority
March 1 through November	24 hours/day	1-5 in any order then 6-16 in any order.
December 1 through February	0600-2000 hrs	unpaired units in any order
	2000-0600 hrs	any unit

Reason for Change: The Project does not need U5 for station service. They would like the flexibility to run other units instead. Egress conditions are not dependant on U5 being the first unit on, but rather egress is dependent on the operation of any of turbine units 1-5.

Comments from others: include "in any order" after 1-5.

Record of Final Action: FPOM reviewed and agreed to the change.
****

Change Request Number:
Date: 4/24/08
Proposed by: John Day Project

Location of Change- JDA 1.1.3

Proposed Change:
Change *November 30, weather permitting* to *as close to November 15 as personnel and weather allows.*

Reason for Change:
The Project is concerned about freezing temperatures and staffing. They will attempt to keep the facility operating for PIT tag interrogation for as long as possible but feel anything beyond 15 November is risky.

Comments from others: OK.

Record of Final Action: FPOM reviewed and agreed to the change.
****

Change Request Number:
Date: May 8, 2008
Proposed by: NWW Operations

Proposed Change: Ice Harbor Dam. 1% Operating tables. HDC has developed for IHR units; one table applies to U1 & U-3, another table just for U-2 (the one with the welded blades) and another table for U-4 to U-6.

Reason for Change: Updating the 1% operating tables for 2008

Comments from others: OK

Record of Final Action: Presented to FPOM May 8, 2008. Action: send in new tables for meeting notes and for inclusion into the 2008 FPP.

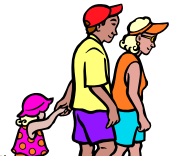
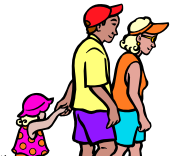
April 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 FPAC Adult Fish Counting Starts all Dams. Juvenile Bypass Season Begins	2	3 Juvenile Spill Starts Snake River Dams – Pools to MOP	4	5
6	7	8 FPAC	9 TMT	10 FPOM Meeting- McNary Velocity task group.	11	12
13	14	15 FPAC	16 B2CC closed- BGS TDA Fish unit OOS NHC MCN Surface Bypass Agency Visit	17 TDA Fish unit OOS	18 TDA Fish unit OOS	19 Happy Birthday
20	21 Snake River Juvenile Transport Begins TSP PDT at ERDC ICH COP 1300	22 FPAC TSP PDT at ERDC ICH COP 0930	23 TMT TSP PDT at ERDC NWW SRWG- passage	24 NWP FFDRWG TSP PDT at ERDC	25 TSP PDT at ERDC	26
27 Happy Birthday	28	29 FPAC NWW FFDRWG LMN, ICH	30 NWW field trip- ICH, MCN			

May 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 SCT@ MCN	2	3
4	5	6 FPAC	7 TMT	8 FPOM Meeting- RDP Velocity Task Group Meeting	9	10
11	12	13 FPAC	14	15	16	17
18	19	20 FPAC	21 TMT	22	23	24
25	26	27 FPAC	28	29	30	31

June 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 FPAC	4 TMT	5	6	7
8	9	10 FPAC	11	12 FPOM Meeting- JDA	13	14
15	16	17 FPAC	18 TMT	19	20	21
22	23	24 FPAC	25 Happy Birthday	26 NWP FFDRWG	27	28
29	30					

FISH PASSAGE O&M COORDINATION TEAM
Adult and Juvenile Fish Facilities Status Report
U.S. Army Corps of Engineers
Walla Walla District
May 8, 2008

Construction

McNary: TSWs tested and placed into service April 9.

Ice Harbor: Turbine unit 6 – remains out of service due to transformer gas problem. RSW: Repair of damaged seals completed April 10. Placed in service April 11.

Little Goose: Turbine unit 6 remains out of service due to an electrical short in the stator.

Lower Granite: Turbine unit 1 was taken out of service April 20 due to overheated thrust bearing. Repairs will take 4 to 8 weeks. Turbine unit 2 remains out of service for rewind and 6-year overhaul, with completion is not expected until mid-June 2008.

Operations and Maintenance - Juvenile Fish Facilities

McNary: Alternating days of primary and secondary bypass began April 1. Trash rack raking took place April 16. Approximately 40 cubic yards of debris removed. Primary dewaterer side screen cleaner – 8 hour outage took place April 5. Power cable tray liner replaced with UHMW liner. On April 12, a small kink was noted in the liner, possibly from heat expansion. The kink is not impeding normal operation but is being monitored closely. Debris in sample system debris force reduction of sample rate from 20% to 10% on April 23. Minor blockages removed from return to river lines on April 18, 22 and 24. Primary dewaterer transition screen cleaner taken out of service April 30 after the motor carriage separated from the trolley. Repairs will take place during mid-season maintenance shut down in June. Repairs require lowering of water level in the collection channel. The screen is being manually swept as needed.

Ice Harbor: Sample Facility: In bypass mode except for 8 samples taken in April – all results satisfactory.

Lower Monumental: Transport system/Bypass System: In secondary bypass, collection for transport begins May 12. Fish mortalities incurred April 17 in wet lab. See separate report.

Little Goose: Transport system/Bypass System: In secondary bypass, collection for transport begins May 9. Facility operated on back up generator service from April 25 to May 7, following a major electrical equipment failure at the fish facility on April 24. Power was interrupted for 15 minutes every 48 hours to service the back-up generator. The facility is now on regular station service.

Lower Granite: Transport system/Bypass System: Bypass and 24hour/day sampling operations began April 1. Collection for regular transport operations commenced May 1.

Operations and Maintenance - Adult Fish Facilities

McNary: Oregon Ladder: Fish pump #1 was returned to service May 3. The pump was out of service due to an oil leak. Washington Ladder – NFEW1 new cables and chain link installed April 9. The lifting cables subsequently developed severe oscillations which were resolved

concurrently with similar chain link replacement work at NFEW2 and NFEW3 from April 22 – 24. Weirs remained operational during cable/chain link replacements.

Ice Harbor: North Shore and South Shore ladders are in service. Three floating orifice gates were closed April 24 in the powerhouse section of the south fishway. Four floating orifice gates remain open. North Shore Fish pump #2 gearbox is currently undergoing manufacturer warranty repairs.

Lower Monumental: Pump #3 out of service due to problem with the diffuser assembly and bearing housing. SPE-2: Project is taking advantage of 2-pump operations. Entrance SPE-2 was "bulkheaded off" and is currently being rebuilt.

Little Goose: Ladder in service, fish pump #3 briefly shut down April 22 due to cooling water problem. Otherwise, pumps are operating satisfactorily. Ladder "jumper" net installation completed approximately April 15 in count pool area.

Lower Granite: All fish pumps were taken out of service on April 18 (2106 – 2400 hours) and 19 (0200 – 0401 hours) in support of powerhouse outages to install new service buses.

Research
McNary: USGS TSW research continues.

Lower Monumental: Oregon State University collecting steelhead daily in support of avian predation research. NOAA researchers began collecting fish to investigate fish passage and survival.

Little Goose: USGS currently radio-tracking adults through the tailrace. USGS is also deploying and tracking drogues in the tailrace to track spill pattern currents and eddies. NOAA researchers began collecting fish at Little Goose to investigate fish passage and survival at Lower Monumental.

Lower Granite: Adult fish trap operations continues with 4% sample rate to monitor spring Chinook. Numerous juvenile fish research taking place at the present time including marking and tagging for the following NOAA research efforts: Transport Survival Study, Alternate Barge Release Site Study, Survival Study, Extra Mortality Study, Comparative Tag Effects Study, and Delayed Mortality Study. Other efforts include acoustic tag research conducted by UC Davis, PNNL and University of Idaho; and a latent mortality study being conducted by the University of Washington.

Other
McNary: On April 13, a tugboat hit the downstream navigation lock guide wall. On April 14, a special spill pattern for when a tugboat has to enter or exit the downstream end of the navigation lock was established. This pattern will be used when total spill is below 57 kcfs.

Little Goose: turbine unit 2 operated outside of 1% efficiency criteria for 30 minutes on April 28.

GBT personnel reported excessive gas bubble trauma symptoms in juvenile steelhead examined at Little Goose Dam on April 20. See separate report.